

**Business Risk Management: A Brief to the House of Commons  
Standing Committee on Agriculture and Agri-Food**

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Thank you for offering me the opportunity to submit a brief on Business Risk Management (BRM) programs. I am an agricultural economist who has been an academic for the last 20 years and before that I was a bureaucrat with AAFC. Although I am a trade economist, I have published research on BRM safety net programs (NISA, CAIS, and AgriStability) and hold research grants on farm income support and BRM. I will offer suggested approaches to reforming BRMs at the end of this brief, but before I do that I need to consider a series of questions that that will lead to the suggestions.

1. *What is the rationale for government administered BRM programs?* From an economist's perspective there are two broad reasons for governments to intervene. First, to redistribute income into agriculture. The second broad reason relates to addressing a market failure – in this case the absence of contingency markets to deal with excess risk. The title BRM seems to imply that the reasons for interventions revolve around risk management and missing contingency markets. However, the exact objective is not explicitly stated and these programs are frequently viewed as income support (e.g. Lester, 2018 and OECD, 2011). At best there is confusion about whether the programs are to support incomes or to bridge a missing market to manage risks. Producer groups typically ask for both *Stability* and *Adequate Incomes* which demonstrates a lack of clarity about the main objective of the program. I will not pre-judge the validity of the program objectives, but I want to point out that with a lack of clear objectives there is a violation of a fundamental principle, known as *Tinbergen's rule*. With this rule efficiency requires that the number of policy instruments has to equal the number of objectives. With a single policy instrument (AgriStability) and two policy objectives (income support and stabilization) there are bound to be trade-offs leading to suboptimal solutions. When the number of objectives exceeds the number of instruments not only is the policy inefficient, but the participants can never be satisfied. This is the history of safety-net reform since 1992, where whole-farm margin based programs are designed, deemed to be inadequate, re-designed to essentially the same type of instrument, and the cycle goes on. Why does policy history repeat itself and why does the eventual new program become some modified version of a whole-farm income margin based deficiency payment?
2. *What pressures and constraints drive the evolution of BRM policy?* At least four drivers can be identified (Freshwater and Hedley, 2004):
  - Concerns about government deficits and debt
  - Pressures to harmonize federal and provincial programs
  - Disciplines of international trade agreements and threat of trade remedy actions
  - The desire not to mask market signals or affect production decisions

Canadian policy makers have always been conscious of the threat of countervailing duties. Programs deemed to be *generally available* are not considered to be countervailable under US trade law. Likewise paragraph 7 of Annex II of the WTO Agreement on Agriculture identifies the conditions for whole-farm margin based programs to not be subject to WTO *Aggregate Measure of Support* (AMS) reduction commitments. So these trade pressures are part of reason that reformed programs are

designed to be whole farm. Furthermore, if the intent is preserve market signals then stabilizing broad based net-revenues is less distorting than stabilizing product specific revenues or individual prices. Supporting net income (revenues less costs) creates less incentive for producers to farm the program then does stabilizing gross revenues. If the producer cannot predict the payout they are more likely to follow market signals and less likely to produce to get payouts. So there is a natural evolution of Canadian program reforms always to revert back to whole-farm margin based programs.

3. *What are the economic principles of good program design?* The OECD (2011) proposed guiding principles:
  - Do not blunt market signals
  - Different levels of risk require different levels of responses (normal fluctuations, marketable risks and catastrophic risks).
  - Effective policy requires attention to interactions and trade-offs among:
    - i. Politically acceptable safety nets and minimizing distortions
    - ii. Different policies

But if there are trade-offs what are they and how do they relate to an individualized net whole-farm margin and how do they affect potential BRM reform?

4. *What are the costs and the benefits of an individualized net whole-farm margin-based program such as AgriStability?* Conceptually this should be the least distortionary of alternative possible safety nets. It is difficult to predict payments, so there is less room to *farm the program*, and more incentives for farmers to follow market signals. Whole farm margin insurance pools all of the price and production risks of one farm into a single insurance policy at a lower cost compared to commodity-specific programs. So whole-farm insurance accounts for diversification effects that result in lower program costs than insuring each commodity separately. The program is addressed to the circumstances of individual producers and should respond to their needs to smooth income (and ultimately their consumption possibilities) over time.

Although conceptually an individualized whole farm margin program is preferred to other possible safety-nets, from a practical implementation perspective it has several short-comings. The current AgriStability program requires CRA tax-filer records to determine payouts. Using tax-filer records creates a one year lag associated with filing taxes, but there are additional delays. If producers report revenue and expenses on a cash basis to CRA, then the program year margin has to be adjusted for changes in purchased inputs, crops and livestock inventories and accounts payable (CAP, 2018). This *adjustment process* requires additional farmer provided information (and accounting expertise) so it adds time to the process of calculating program year margins (and ultimately payouts). This of course is the basis for the criticism that the program is not “*timely*”. The time lag is built-in to the design of the program. The *accrual adjustment* process also contributes to the criticism that AgriStability is “*unpredictable*.” One problem is that interest groups never precisely define what predictability is. The nature of markets, and weather, is such that both are unpredictable, so how can a stabilization program be predictable? If uncertainty is coupled to the program, then the program is

unpredictable. I will give the farm interest groups the benefit of the doubt, and attribute the lack predictability to the post-outcome period and the lack of transparency of the accrual adjustment process (i.e. converting cash accounting data to accrual data). The accounting process is not always transparent, but more importantly inventory adjustments are based on valuations using both a start-of-year price and an end-of year price. The timing of these price adjustments reduces the ability to predict an AgriStability production margin and increases the dissatisfaction with the program. Reduced predictability with a less than transparent process to determine program margins also affects the farmer's ability to obtain operating loans. Bankers when making loan decisions want a relatively predictable forecast of net income.

5. *Are there alternative mechanisms to trigger program payments that are not based on individual tax records, yet are representative of the individual producer's financial situation?* Programs offered by the USDA Risk Management Agency (RMA) may offer some insight into potential alternative trigger mechanisms. These programs include: area-based (county-level) yield insurance, and area-based revenue insurance. To date these products (Area Yield Protection and Area Revenue Protection) are commodity-specific yield and revenue insurance products for crops: However, RMA-USDA (2019) does offer a whole-farm (i.e., multiple commodity) farm-level revenue insurance product (Whole Farm Revenue Protection (WFRP)).

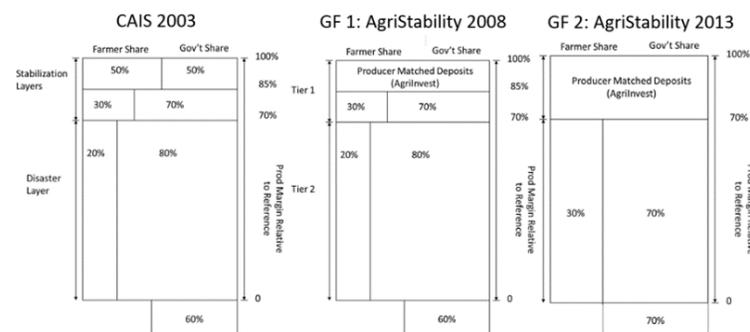
So if expedited payouts are to be achieved what would be required of a system that depends on regional aggregated records?

- What is the appropriate aggregation for the region? Ideally the region should be small enough that producers within it are relatively homogenous, so that the trigger mechanism is representative of all farmers in the area. However, from a practical perspective the region must be an existing administrative union where is it possible to easily obtain prices and production records.
- First while crop district, or country level, price and yield data is available, representative data for district allowable expenses is not easy to acquire. There is considerable heterogeneity among producers. Typically the most efficient producers have proportionately lower costs, relative to their less efficient counterparts, than they have proportionately higher revenues, relative to their counterparts. So the challenges of determining regional indexes of expenses to determine a regional production margin would be considerable.
- Farm yields and revenues are not perfectly correlated with county yields and revenues. So area-based insurance products are subject to *basis risk*—the risk that farm-level variables will not fluctuate in the same manner as county-level variables. In extreme cases, a producer could receive an indemnity (program payment) without incurring any loss or could incur a loss without receiving any payment.
- A product specific revenue assurance product is easier to administer than a whole farm program. Selecting an appropriate weight for each commodity becomes an important issue when designing whole farm, area-based revenue protection. A

simple index based on the sum of crop revenues across all commodities produced in the county implicitly assigns commodity weights that reflect the crop mix of the county to every whole-farm, area-based revenue insurance policy sold in that county. As a result, a farm producing a different crop mix may receive poor risk protection. By the same token, an area based product is more likely to be more acceptable to a group of homogenous producers.

Presumably this approach would reduce the complexity of filling out forms and should reduce the time necessary for payouts. However, predictability of payments would not necessary improve for individuals whose operations deviate from representative data.

6. *Is it important to pay attention to multiple layers of risk?* Unlike other insurance products AgriStability does not have a formal premium. All participants are required to pay an annual Administrative Cost Share (\$55) and an annual program fee (0.45% of reference margin) (CAP, 2018). These fees are in no way to be confused with an actuary sound premium (i.e. an expected indemnity) and the administrative practice has been to substitute producer co-insurance through reduced program coverage for premium



coverage. Over time, various incarnations of AgriStability (see diagram below) have gradually increased the co-insurance component. Historically as the level of coverage increased (i.e. got closer to 100%) the farmer’s share of covering for the margin decline increased (see left hand portion of each diagram). The stepped process for CAIS and AgriStability-GF1 recognizes three types of risk: everyday normal fluctuations; marketable risks (e.g. risks that can be shared through futures markets or marketing contracts) and catastrophic risks (OECD 2011). Governments need to agree on a common and effective definition of catastrophic events that require public assistance. The boundaries between risk layers should be determined by careful empirical analysis and not by political expedience.<sup>1</sup>

Governments have played with the size of program coverage, but have never addressed the issue of fair premium. It is not desirable to provide multiple coverage of each risk layer. It is not only complicated to create off-sets but it is also inefficient. Public

<sup>1</sup> The bottom 70% X 70% layer is defined by paragraph 7 of Annex II of the WTO Agreement on Agriculture. There is nothing magical about this level of coverage. In fact paragraph 7 was known as the “Canada clause” and it was developed to accommodate earlier Canadian safety nets.

provision of support programs that address marketable risks, displaces private risk management tools. Certainly different levels of risk require different premiums, but so do different individuals with different risk profiles. Reforming AgriStability to return to the second layer of 85% coverage probably includes part of the *normal risk* layer and involves income support rather than stabilization. Returning to an 85% coverage level almost certainly has more to do with transferring income to agriculture than with developing more effective risk management instruments. This reform certainly would increase program participation. However, participation rates are not necessarily a good criterion to judge the adequacy of a program.

Now consider my suggestions for reforming the current BRM suite of programs. Adopting reforms will always involve trade-offs and these trade-offs should be considered explicitly:

- Policy makers have to decide if the objective for BRM programs is to stabilize farm incomes or if the objective of the program is to support incomes. If policy makers insist on achieving multiple objectives with a single policy instrument, then the trade-off is perpetual dissatisfaction by participants and repeating cycles of program reform. If the primary object is to re-distribute income towards agriculture the most efficient (and least distorting) method is a direct payment. With a direct payment the recipient cannot affect the size of the payment by changing their behavior. Therefore, they follow market considerations when making their production decisions. Likewise, although income stabilization may cause farmers to take on other risks in other parts of their portfolio (e.g. financial risk), a direct payment is unlikely to result in this behavior. The element of the BRM suite that comes closest to a direct payment is the AgriInvest program. The OECD (2011) describes AgriInvest as providing “minimal risk effects and is mainly used to increase the level of income (support) rather than managing its variability” (OECD 2011 p28). If income re-distribution is a primary objective funds should be re-directed to AgriInvest.
- If policy makers decide that stabilization is the ultimate objective for BRM programs then they have to decide if the program is to be targeted to the individual or a broader area trigger mechanism to determine the size and frequency of payments. The trade-off for an individualized margin based program is the *timeliness* of the payouts. Furthermore, since farmers report their income to the CRA on cash basis, their records have to be adjusted to an accrual basis so that the program covers revenues and expenses in one insurance year. This process reduces the timeliness and predictability of payments. If the primary objective is to target individual circumstances then the current whole-farm margin based program should be retained.
- If a more-timely, possibly more predictable program, is desired then an area based index program may be desirable. However, there are additional trade-offs that must be incurred. First, it would be very difficult to obtain representative expenses on aggregated regional basis. Therefore advantages (production neutrality) of a margin based program must be foregone and some revenue based program must be used. While it is possible to obtain regional prices and production information, a whole-farm revenue insurance product must be customized to individual’s commodity mix. This would require (i) commodity

weights, (ii) coverage levels, and (iii) scale parameters. The scale factor variable adjusts indemnities to allow for differences in country- level whole-farm revenues shortfalls translate into shortfalls in farm-level whole-farm revenues. The question is how much flexibility would be allowed for the design of an individual policy. Would there be a standardized policy or many idiosyncratic policies. Certainly it would be easier to develop grains and oilseeds policies, than to design policies which include crops and livestock. But from a practical perspective the most pragmatic approach would likely involve single commodities. Regardless of the approach used and the level of aggregation, the problem of basis risk (the risk that farm-level variables will not fluctuate in the same manner as county-level variables). Basis risk would result in low participation levels and possibly a less predictable program than the current AgriStability program. If basis risk is sufficiently large, then the regionally triggered program would be inappropriate and efforts at reform should concentrate on revising the current individually targeted AgriStability program and policy makers should accept the relatively long pay-out lags.

Finally I would like to try to dispel three myths about BRM programs. First, that “green-box” criteria (i.e. Paragraph 7, Annex II WTO Agreement on Agriculture) is *not* a meaningful constraint on the development of BRM programs. For the last three notifications to the WTO, Canada’s current measure of Aggregate Measure of Support (AMS) expenditures only amounted to 15% of the bound AMS commitment (WTO, 2019). There is a great deal of flexibility for how Canada must report its domestic support expenditures to the WTO. Reforms to BRM programs are not constrained by the WTO Agreement on Agriculture. Second, arguments for a *bankable* program are misleading. Bankers are more interested in a track record for the individual producer and not expected program payments. Even the most sophisticated bullet-proof forecast of BRM payments is not going to weigh much if the producer’s history and track record are poor. Third, that AgriStability discourages diversification on the farm. Diversification as a risk management tool is one of the primary arguments for a whole farm safety net program. If program payments are the primary driver of the decision to diversify - for example, with a mixed farm, if either the grain or livestock income falls, and the overall farm is less likely to see a payment than for non-diversified farms – then the objective of the program is to transfer income and not to stabilize risk. The farm sector is now wealthier than the average Canadian household both in terms of assets but also in terms of income, so they sector needs to justify why continual income transfers are justified.

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